



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION VIII

999 18th STREET - SUITE 500
DENVER, COLORADO 80202-2466

JAN 26 1998

Ref: 8P2-W-GW

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Ms. Kathy Turner
Petroleum Engineering Technician
Petroglyph Operating Company, Inc.
P. O. Box 1839
Hutchinson, Kansas 67504-1839

RE: UIC MINOR PERMIT MODIFICATION
Conversion of Additional Well to
Antelope Creek Waterflood
EPA Area Permit UT2736-00000
Duchesne County, Utah

Dear Ms. Turner:

Your letter of December 23, 1997, requesting that the following production well be converted to a Class II enhanced oil recovery well and added to the Antelope Creek Waterflood, as authorized under EPA Area Permit #UT2736-00000. Your request is hereby granted.

<u>NAME</u>	<u>LOCATION</u>	<u>EPA WELL PERMIT NO.</u>
Ute Tribal #04-14	SE/SW Section 4 T 5 S - R 3 W Duchesne County, UT	#UT2736-04424

This additional well is within the boundary of the existing area permit for the Antelope Creek Waterflood (UT2736-00000), and this addition is made by minor permit modification according to the terms and conditions of that permit. Unless specifically mentioned in this Minor Permit Modification, all terms and conditions of the original permit will apply to the construction, operation, monitoring, and plugging and abandonment of this additional injection well. The proposed well location, well schematic, conversion procedures, plugging and abandonment plan and schematic, submitted by your office, have been reviewed and approved as follows:

- (1) The **conversion** of this production well has been reviewed, and found satisfactory, therefore, no corrective action is required.



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RE: UIC MINOR
Conversio
Antelope
EPA Area Permit UT2736-00000
Duchesne County, Utah

Scan under
UT 20736 - 00000
Modification - Minor
Mod Approved 1/26/1998
will need to link
with UT20736 - 04424
in new database also
under 81 Add Well to
Area Permit,

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- (2) **Maximum injection pressure (Pmax)** - the permittee submitted a list of six (6) individual zones, within the Ute Tribal #04-14, which were individually fraced and established an average fracture gradient (Fg) of 0.89 psi/ft. which was derived from instantaneous shut-in pressures (ISIP) from each zone. This Fg is acceptable to the Environmental Protection Agency (EPA), and a theoretical maximum allowable surface injection pressure (Pmax), for this well, may be calculated as shown below:

$$P_{max} = [Fg - 0.433 (Sg)] d$$

Where: Pmax = Maximum surface injection pressure at wellhead

d = 4323' shallowest perforations

Sg = Specific gravity of injected water

$$P_{max} = [0.89 - .433 (1.00)] 4323$$

$$P_{max} = 1976 \text{ psig}$$

Until such time as the permittee demonstrates that a fracture gradient other than 0.89 psi/ft applies to the disposal zones of this newly converted well, the maximum allowable wellhead injection pressure (Pmax) for this well will be 1976 psig.

- (3) The **plugging and abandonment plan and schematic**, submitted by your office, has been reviewed, and approved.

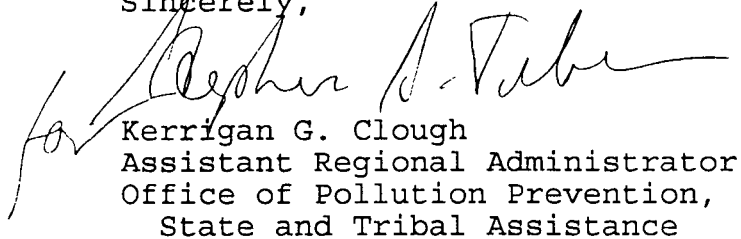
Prior to commencing injection into this well, permittee must fulfill permit condition Part II, C. 2. and have received separate written authorization to inject by the Environmental Protection Agency. In summary, these requirements for your newly permitted injection well are:

- (1) All conversion is complete and the permittee has submitted a completed **Well Rework Record (EPA Form 7520-12)**.
- (2) The pore pressure has been determined.
- (3) The well has successfully completed and passed a **mechanical integrity test (MIT)**; EPA form enclosed.

All other provisions and conditions of the permit remain as originally issued.

If you have any questions, please contact Mr. Chuck Williams at (303) 312-6625. Also, please direct the above requirements to Mr. Williams at the above letterhead address, citing **MAIL CODE 8P2-W-GW**. Thank you for your continued cooperation.

Sincerely,


Kerrigan G. Clough
Assistant Regional Administrator
Office of Pollution Prevention,
State and Tribal Assistance

Enclosure: EPA Form

cc: Mr. Ronald Wopsock, Chairman
Uintah & Ouray Business Committee

Ms. Elaine Willie, Environmental Director
Ute Indian Tribe

Norman Cambridge
BIA - Uintah & Ouray Agency

Mr. Jerry Kenczka
BLM - Vernal District Office

Mr. Gilbert Hunt
State of Utah Natural Resources
Division of Oil, Gas & Mining

Mechanical Integrity Test

Casing or Annulus Pressure Test for Well UT2736-04424

U.S. Environmental Protection Agency
Underground Injection Control Program, UIC Implementation Section, 8WM-DW
999 18th Street, Suite 500, Denver, CO 80202-2466
This form was printed on 01/20/1998.

EPA Witness: _____ Date ____/____/____

Test conducted by: _____

Others present: _____

UTE TRIBAL #04-14	2R UC as of ____/____/____
ANTELOPE CREEK	SESW 04 05S 03W
Petroglyph Operating Company, Inc.,	Hutchinson, KS Op ID PTG01
Last MIT: No record ____/____/____	
Max Allowed Press psig	1997 Max Reported Press 0 psig

Is this a regularly scheduled test? ☐ Yes ☐ No
 Initial test for permit? ☐ Yes ☐ No
 Test after well rework? ☐ Yes ☐ No

Well injecting during test? ☐ NO ☐ YES _____ BPD

Initial casing/tubing annulus pressure _____ psig
 Does the annulus pressure build back up? ☐ Yes ☐ No

TUBING PRESSURE			
Initial	psig	psig	psig
End of Test	psig	psig	psig
CASING/TUBING ANNULUS PRESSURE			
Time	Test #1	Test #2	Test #3
0 min	psig	psig	psig
5			
10			
15 min			
20			
25			
30 min			
Result (circle)	Pass Fail	Pass Fail	Pass Fail

JAN 26 1998

Ref: 8P2-W-GW

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RETURN RECEIPT REQUESTED

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 Petroleum Engineering Technician
 Petroglyph Operating Company, Inc.
 P. O. Box 1839
 Hutchinson, Kansas 67504-1839

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CEW
 8P2-W-GW
 1/20/98

8P2-W-GW
 W. Donkhus
 1/20/98

1/20/98 XG
 mailed
 1/27/98 XG

8P2
 1/28/98
 ↑ 3

THM for DCH
 8P2-W-GW
 1/22/98

Tubey
 8P2-W
 1/26/98

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Mr. Gilbert Hunt
State of Utah Natural Resources
Division of Oil, Gas & Mining

FCD: January 20, 1998. Chuck W., F:\DATA\WP\PETROGLF\MNRMD-04.14

1/27/98 CW 3207C

Is your RETURN ADDRESS completed on the reverse side?

SENDER: 3207C

- Complete items 1 and/or 2 for additional services.
- Complete items 3, 4a, and 4b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

JAN 28 1998

I also wish to receive the following services (for an extra fee):

- ☐ Addressee's Address
- ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:
Ms. Kathy Turner
Geology/Petroleum Engineering Technician
Petroglyph Operating Company, Inc.
P.O. Box 1839
Hutchinson, KS 67504-1839

4a. Article Number
P164 014 434

4b. Service Type
☒ Certified
☐ Registered
☐ Express Mail
☐ Return Receipt for Merchandise
☐ Insured
☐ COJ

7. Date of Delivery
JAN 30 1998

5. Received By: (Print Name)
Kristine L Brown

6. Signature: (Addressee or Agent)
X Kristine L Brown

8. Addressee's Address (Only if requested and fee is paid)
FEB 2 1998

PS Form 3811, December 1994

Domestic Return Receipt

Thank you for using Return Receipt Service.

1/27/98 CW 3207C
P 164 014 434

US Postal Service
Receipt for Certified Mail
No Insurance Coverage Provided.
Do not use for International Mail (See reverse)

Sent to	Ms. Kathy Turner
Street & Number	Geology/Petroleum Engineering Technician
Post Office, State, & ZIP Code	Petroglyph Operating Company, Inc.
Postage	P.O. Box 1839
Certified Fee	Hutchinson, KS 67504-1839
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	\$
Postmark or Date	

PS Form 3800, April 1995